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| 10/674,966 | 09/30/2003 | Frederick M. Discenzo | 01AB175C/ALBRP246USC | 4946 |

7590 01/29/2007
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| EXAMINER |
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CABRERA, ZOILA E

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| ART UNIT | PAPER NUMBER |
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2125

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/29/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/674,966

Applicant(s)

DISCENZO ET AL.

Examiner

Zoila E. Cabrera

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-47 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-47 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring phenomenon) since it fails to produce a useful, concrete and tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having a real world value rather than a result that may be interpreted to be abstract in nature, as, for example, a thought, a computation or manipulated data. More specifically, the claimed subject matter provides for "a component that received data and a prognostics engine that infers states for modeling and for *facilitating* modification"; "a data field comprising information that regulates operation of a business", "analyzing and specifying" steps. These produced "results" remain in the abstract and thus, fails to achieve the required status of having a real world value since

it does not "generate" any output data or store values of output data for a practical use in a real world application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 38 is rejected under 35 U.S.C. 102(e) as being anticipated by Bryant et al. (US 2004/0236450 A1).

As for claim 38, Bryant discloses:

38. A data packet adapted to be transmitted between at least two computer processes, comprising: a data field comprising information relating to regulating operation of a business component based at least upon diagnostic data concerning a machine (Fig. 1; [0114]-[0122]; Abstract; [0125]-[0132]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-37, 39-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotou et al. (US 2002/0013635 A1) in view of Bryant et al. (US 2004/0236450 A1).

Regarding claims 1-37, 39-47, Gotou discloses:

1. A system that facilitates optimizing industrial business operations, comprising: a component that receives data relating to state(s) of a subset of machines that are part of the industrial business operations Page 1, [0011]-[0012]); and a diagnostic engine diagnose at least a subset of the operations based in part on the received data, the diagnostic engine comprising a plurality of intelligent software agents that serve as proxies for at least the subset of machines, for modeling and representing interactions with one another, and for facilitating convergence on modification and control of the subset of machines, for efficiently optimizing industrial business operations (Page 2 [0013]; Page 5, [0051]-[0052].

2. The system of claim 1, further comprising a host computer that executes the diagnostic engine (Fig. 1, element 17).

3. The system of claim 1, the diagnostic engine comprising a classifier (Page 6 [0060]-[0061]; Page 20, [0239]).

4. The system of claim 1, at least a subset of the machines comprising diagnostic components that collaborate in a distributed manner (Page 3, [0029]-[0030]).

5. The system of claim 1, at least one of the diagnostics components performs diagnosis for a cluster of machines (Page 1, [0011]-[0012]).
6. The system of claim 1, the diagnosis engine and the diagnostic components collaborating to improve operating rate of at least a subset of the machines (Page 2, [0013]).
7. The system of claim 3, the classifier performs a probabilistic analysis in connection with the inference ([02030]).
8. The system of claim 1, at least a subset of the machines and/or components are represented by intelligent agents (Fig. 10, element 4).
9. The system of claim 1, at least a subset of the machines and/or components are physically located remote from one another (Fig. 21).
10. A method that facilitates asset optimization in an industrial automation environment, comprising: receiving and analyzing in real-time data relating to diagnoses of operational aspects of a subset of machines that are part of the industrial automation system; modeling and representing interactions of the subset of machines for facilitating convergence on modification and control of the subset of machines; (Figs. 26-27,

element 114); and modifying asset utilization in the industrial automation system based at least in part as a function of the analyzed diagnostic machine data (Page 6 [0064]).

11. The method of claim 10 further comprising: selecting a desired operating point within an allowable range of operation about a system setpoint according to performance characteristics associated with at least one of the machines; and controlling at least one machine according to the desired operating point (Pag. 2, [0020]).

12. The method of claim 10, further comprising employing an options based analysis in connection with asset management (Page 3, [0029]-[0032]).

13. The method of claim 11, further comprising obtaining the system setpoint and the allowable range of operation from a user (Page 2, [0020]).

14. The method of claim 11, wherein selecting the desired operating point comprises: correlating at least two of motor efficiency information, pump efficiency information, and motor drive efficiency information in order to derive correlated system efficiency information (Page 18, [0208]); and selecting the desired operating point as the optimum efficiency point within the allowable range of operation according to the correlated system efficiency information (page 2, [0020]).

15. The method of claim 14, wherein controlling the system according to the desired operating point comprises providing a motor speed signal to the motor drive according to the desired operating point (Page 1, [0002]).

16. The method of claim 14, further comprising obtaining at least one of the efficiency information, the allowable range, and the system setpoint from a user (Page 2, [0020]).

17. The method of claim 14, further comprising obtaining at least one of the efficiency information, the allowable range, and the system setpoint from a host computer (page 2, [0020]).

18. The method of claim 17, wherein the at least one of the efficiency information, the allowable range, and the system setpoint is obtained via a network (Page 2, [0020]); Fig. 28).

19. The method of claim 18, wherein the at least one of the efficiency information, the allowable range, and the system setpoint is obtained via wireless communications (Page 2, [0020]); Fig. 28).

20. The method of claim 14, further comprising obtaining at least a portion of one of the efficiency information, the allowable range, and the system setpoint from prior operation of the system (Page 6, [0057]).

21. The method of claim 11, wherein selecting the desired operating point comprises: correlating component performance information associated with at least two components in the system in order to derive correlated system performance information (Page 17, [0204]); and selecting the desired operating point as the optimum performance point within the allowable range of operation according to the correlated system performance information (Page 2, [0020]).

22. The method of claim 21, wherein controlling the system according to the desired operating point comprises providing a setpoint to a controller associated with the system according to the desired operating point (Page 2, [0020]).

23. The method of claim 12, further comprising automatically ordering an asset via the Internet (Page 6, [0057]).

As for claims 24-27, the same citations applied to claims 17-20 above apply as well for these claim.

28. The method of claim 21, wherein the component performance information comprises at least one of life cycle cost information, efficiency information, life expectancy information, safety information, emissions information, operational cost information, MTBF information, noise information, and vibration information (Page 6,

[0059]).

29. The method of claim 28, wherein the system comprises a motorized pump system for pumping fluid, having an electric motor operatively coupled with a pump, and a motor drive providing electrical power to the motor, wherein the component performance information comprises efficiency information related to at least two of the motor, the pump, and the motor drive, and wherein the correlated system performance information comprises cost information related to the system operational cost per unit of fluid pumped (Page 18, [0208]).

30. The method of claim 10, wherein the system comprises a motorized pump system having an electric motor operatively coupled with a pump, and a motor drive providing electrical power to the motor, and wherein the performance characteristics associated with a plurality of components in the system comprises life expectancies of at least two of the motor, the pump, and the motor drive (Page 18, [0208]).

31. The method of claim 10, wherein the system comprises a motorized pump system having an electric motor operatively coupled with a pump, and a motor drive providing electrical power to the motor, and wherein the performance characteristics associated with a plurality of components in the system comprises cost of operation associated with at least two of the motor, the pump, and the motor drive (Page 18, [0208]).

32. The method of claim 10, wherein selecting the desired operating point comprises measuring at least one process variable from a sensor associated with the system (Page 6, [0058]-[0059]).

As for claim 33, the same citations applied to claim 10 above apply as well for this claim.

As for claims 34-35, the same citations applied to claim 1 above apply as well for these claims.

36. A computer readable medium storing the components of claim 1 (Fig. 24, element 119).

37. A computer readable medium having stored thereon computer executable instructions for performing the method of claim 10 (Fig. 24, element 119).

39. An industrial automation layout methodology, comprising: analyzing machine related diagnostic data (Fig. 24, element 101); analyzing business concern data (Fig. 24, PORPER REPLACEMENT BUDGET); analyzing business objective data(PROPER STOCK MANAGEMENT); and specifying machine acquisition based at least in part upon the analyses (Page 6, [0057]; Page 7, [0075]).

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40. A computer-implemented method for ordering parts in an industrial automation environment, comprising: automatically receiving an analyzing data relating to a diagnosis of a machine (Fig. 24, element 101); automatically inferring a failure period for at least one part of the machine (Page 6, [0057]); and automatically ordering a replacement for the at least one part prior to the inferred failure period (Page 6, [0057]).

41. The method of claim 40 further comprising employing an options based scheme in connection with machine management (Page 7, [0075]).

42. The method of claim 40 further comprising employing an options based scheme in connection with decision support (Page 20, [0239]).

43. The method of claim 40 further comprising employing an options based scheme in connection with asset optimization (page 20, [0239]).

44. A system that facilitates optimizing industrial business operations, comprising: a component that receives data relating to state of a subset of machines that are part of the industrial business operations (Fig. 24, element 101); and a diagnostics engine that diagnose at least a subset of the operations based in part on the received data, the diagnostics engine comprising a plurality of intelligent software agents that serve as proxies for at least the subset of machines, for modeling and representing interactions with one another, and for facilitating convergence on modification and control of the

subset of machines (Page 2 [0013]; Page 5, [0051]-[0052]; Fig. 10).

45. The system of claim 44, the diagnostic engine infers future business conditions (Page 6, [0057]).

46. The system of claim 45, the future business conditions comprising at least one of future raw materials and future product demand (Page 6, [0057]).

47. A system that facilitates optimizing industrial business operations, comprising: a component that receives data relating to state of a that is part of the industrial business operations (Fig. 24, element 101); and a diagnostics engine that diagnose at least a subset of the operations based in part on the received data, the diagnostics engine comprising a plurality of intelligent software agents for modeling and representing interactions between the subset of machines, for efficiently optimizing industrial business operations (Page 2 [0013]; Page 5, [0051]-[0052]; Fig. 10).

Gotou discloses the limitations of claims 1-37 and 39-47 above, however, Gotou does not disclose a prognostic engine for analyzing data relating to prognoses of operational aspects of machines or that infers future state of operations of the machine. However, Bryant discloses a model-based machine diagnostics and prognostics system for diagnosing the operational health of a system and to forecast future health. Therefore, it would have been obvious to a person of the ordinary skill in the art at the

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time the invention was made to combine the system of Gotou with the diagnostics and prognostics system of Bryant because it would provide an improved system for forecasting the future operational health of a system ([0003]; Abstract; [0011]-[0012]).

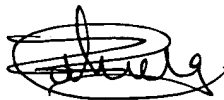
Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (571) 273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Zoila Cabrera
Primary Examiner
1/25/07


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